

TOBACCO INDUSTRY RESEARCH COMMITTEE
350 FIFTH AVENUE NEW YORK 1, N. Y.

Application For Research Grant

#161
(Gr. #97 activated
7/1/55 and renewed
7/1/56).

Date: May 29, 1957

1. Name of Investigator: J. Edwin Wood
2. Title: Instructor in Medicine
Boston University School of Medicine
3. Institution & Address: Massachusetts Memorial Hospitals
Evans Memorial
65 East Newton Street
Boston 18, Massachusetts
4. Project or Subject: The acute effect of inhalation of tobacco smoke and of a cool environment upon reactive hyperemia blood flow of the calf segment of normal individuals and patients suffering peripheral vascular disease of this muscular segment.

5. Detailed Plan of Procedure (Use reverse side if additional space is needed):

The purpose of this study would be to determine whether or not the depressant effect of tobacco smoking and of a cool environment upon reactive hyperemia of the skin (foot) also occurs in the limb segment. Of particular interest in this regard would be the patients who suffer intermittent claudication and who are relieved by sympathectomy. Since this depressant effect upon reactive hyperemia is apparently mediated via the sympathetic nervous system, the question arises as to whether or not the beneficial effects of sympathectomy upon intermittent claudication have to do with these stimuli interfering with removal of the products of metabolism.

The protocol of the experiment will be essentially the same as that used for the studies of foot circulation except that plethysmographic studies of the calf segment with arterial occlusion at the ankle will be used. The subject will be exposed to a room temperature of 83 degrees for a period of one hour or whatever period is required to achieve basal blood flows, following which a 15 minute control period of blood flows will be obtained. Arterial occlusion of 5 minutes duration followed by measurement of blood flows at short intervals will be carried out. The patient will then smoke two cigarettes at his own rate and the above experiment will be repeated during the course of his smoking the two cigarettes. Methods of measuring blood flow and analysis of results will be the same as that utilized in studies of limb segment reactive hyperemia described by Wood et al, Circulation Research 3: 581, 1955. In essence the method reveals the quantity of blood which passes through the limb in the immediate post-ischemia period.

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6. Budget Plan:
Salaries for technical
and secretarial assistance
\$2,500.

Salaries
Expendable Supplies
Permanent Equipment
Overhead (10.6%)
Other

\$2,500
300
300
\$3,100

Total

7. Anticipated Duration of Work: One year

8. Facilities and Staff Available: Facilities available remain the same as before, namely, constant temperature room with all the necessary plethysmographic and recording equipment. Project to be directed by Dr. J. Edwin Wood. Dr. Jay D. Coffman who has devoted a portion of his time to this project during the tenure of the present TIRC grant would continue as a part-time investigator in this program. Miss Barbara Sears who has participated as a technical assistant during the course of the first two TIRC grant years will continue in that capacity during the third year. Dr. Robert W. Wilkins, Director of the Cardiovascular Division, Evans Memorial, will be available at all times for consultation with regard to this project.

9. Additional Requirements: No additional requirements

10. Additional Information (Including relation of work to other projects and other sources of supply):

Results of previous studies carried out under the auspices of the TIRC have been published under the title "Comparative vasoconstrictor effects of inhaling tobacco smoke in warm and cool environments and before and after abstinence from tobacco," by Bohstein, J. W., Wood, J. E., and Wilkins, R. W., American Heart J. 53: 435, March 1957. Also, in abstract form, results of studies carried out during the present grant year are reported in the Proceedings of the American Society for Clinical Investigation under the title "Reduction of reactive hyperemia blood flow of the foot by tobacco smoking," by Wood, J. E., and Coffman, J. D.

1003537414

Signature /s./ J. EDWIN WOOD

Director of Project J. Edwin Wood

/s./ WALTER G. LAMB, M.D.

Business Officer of the Institution

Walter G. Lamb, M.D. Assistant
Administrator

History

Other
Overhead
Permanent Equipment
Expandable Supplies
Salaries

and Developmental Assistance
Bureau for Technical
Cooperation
Budget Plan

3. Anticipated Duration of Work:

8. 3. 2012

[illegible]

2. Additional Requirements:

Additional information (including relation of work to other projects and other sources of supply):

[illegible]

Director of Project

U.S. DEPT. OF JUSTICE

Business Officer of the Institution

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